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**Introduction**

Indian venture capital industry is now considered as one of the predominant players among South Asian countries. As India started emerging as a country which is considered as a hi-tech and global outsourcing center, Indian venture capital industry started looking up with new investment opportunities. New funds have opened their shop here in India and are continuing to bring in more and more funds.

Indian research on initial public offerings is sparse. Previous studies have highlighted the presence of significant underpricing in IPOs. Studies also review the aftermarket performance of these IPOs but the aspect of venture backed IPOs and certification was never studied before. The present study has attempted to study whether venture backed IPOs are different in terms of underpricing and does it indicate certification of quality by venture capitalists.

The study finds that underpricing is significantly less in venture backed IPOs and through econometric models it finds that the presence of venture capitalists on the board does signal quality of the IPO and therefore certify the IPO. Good lead managers generally understand the kind of value addition venture capitalists try to make to a firm they fund and they therefore attempt to market the IPO at a better price thus reducing underpricing.

One of the essential and logical purposes of venture capital business is to exit, ideally through an initial public offering (IPO). The reason for their preference for an IPO is not difficult to understand, and could be attributed to the higher valuation per share that a venture capitalist would get if they offer their stock to public when compared to valuation in any other form of exit.

Indian venture capital industry was dormant for a very long time. In spite of its existence for over two decades, its importance has been realized only recently. Favorable guidelines were instituted by the government to encourage venture capital finance in India in 1996 and several amendments were made in the policy to encourage venture capital investments. But after two decades of its existence one pertinent question one would ask is what the performance of this industry is. When we talk about performance one has to evaluate the nature of venture backed IPOs.

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Venture backed initial public offerings (IPOs) are relatively less in number when compared to many non-venture backed IPOs, but many have gone public and many are in the process of going public. Investors' community has questions and they would like to know, how have these ventures fared in the capital markets in the past? Were these Initial Public Offerings (IPOs) risky? Were these IPOs any different when compared to a similar asset class? Also many Indian venture capitalists are really unsure about their exit strategy. The choice of an IPO, instead of a trade sale is often difficult to make because even they are unsure about the response they would receive from investors' community.

The present study therefore attempts to answer whether venture backed IPOs are different from non venture backed IPOs. If they are indeed different from ordinary IPOs in terms of their returns and perform better than them, such performance can be attributed to venture capitalists participation in the venture's development. Thus the presence of venture capitalists on the board would signal quality and would act as a form of certification from venture capitalists. The present study would also attempt to understand what are the determinants of venture capitalists certification are through econometric models.

The remaining sections are: Section Two reviews literature of studies conducted in other countries and in India on the subject. Section Three introduces the status of Indian venture capital industry. Section Four presents the methodology of the study and introduces the econometric models of the present study. Section Five discusses the results of the study and Section Six concludes the study with cues for further research.

## I. Review of Literature

Loughran, Ritter and Rydquist (1994) have studied the phenomenon of underpricing in 25 countries and have reported that underpricing is inevitable in IPOs. The extent of underpricing in different countries may vary, but almost every researcher would agree that underpricing is prevalent in all IPOs. The reason offered by the theorists of IPO underpricing is asymmetric information. Baron (1982) attributes the same to adverse selection and moral hazard problem and suggests that investment bankers who act as the agents have superior knowledge about the IPOs market and underpricing happens because of conflict of interest between issuer and the investment banker. Rock (1986) focuses on this aspect of informational asymmetry between informed and uninformed investors and relates the pricing of an IPO to 'winner curse' faced by the uninformed investors. Allen and Faulhaber (1989) explain the same by attributing the phenomenon of underpricing to signaling hypothesis, which happens when the high quality firms' initial owners retain more share with them and offer a portion of the holding at a lower price than their intrinsic value, which can be inferred by uninformed investor as a signal of quality. As the information contained in the signal is discounted by the investors the after-market share price would significantly increase and the initial owners can recoup the losses of underpricing by disposing of their stock at a higher price in the market.

Barry, Muscarella, Peavy, Vetsuypens (1990) use a sample of 433 venture backed IPOs and 1123 non venture backed IPOs to find if there exist any difference in average initial returns. They find no significant difference between a venture backed IPO and non venture backed IPO. However in a multivariate econometric model controlled for size of the issue, standard deviation of initial return and underwriters dummy variable, they argue that underpricing reduces if venture capitalists have a larger equity participation before the IPO and if venture capitalists serve longer on the boards of the funded companies. Megginson and Weiss (1991) used a matched sample of 320 venture backed and 320 non-venture backed in terms of issue size and industry over a four year period and reported that the underpricing is significantly less for venture backed IPOs and finds the evidence for certification. Brav and Gompers (1997) have

used a variety of techniques to quantify the abnormal returns and have found that venture backed IPOs out perform the non-venture backed IPOs.

Research pertaining to underpricing of IPOs is sparse in India. Ajay Shah (1995) used as many as seven regression equations to study the reasons for underpricing of IPOs in India. For the purpose he chose a large sample of 2056 IPOs during the period from Jan 1991 to May 1995. The study reports that large issues are less underpriced and small issues have larger underpricing. One of the major determinants of underpricing as reported by the study is listing delay, which is characteristic to Indian IPOs. Madoosudhanan et. al (1997) studied 1922 IPOs from 1992 to 1995 and reported the extent of underpricing. More importantly they studied the aftermarket performance of many of these IPOs from the day of listing to three years. The study reports positive return even after three years and places an argument for the need for relaxing Securities Exchange Board of India's(SEBI) norms. However the aspect of underpricing and the role of venture capitalists on the board of a company going public has never been scrutinized in India. The paper attempts to examine and compare the level of underpricing in venture backed IPOs and non-venture backed IPOs.

## II. The Venture Capital Experience in India

The origin of venture capital in India can be traced back to the setting up of a Technology Development Fund in the year 1987 through the levy of a cess on all technology imports. The fund was managed by Industrial Development Bank of India (IDBI). The idea to have venture capital fund administered by IDBI was a failure. Out of Rs. 418.65 cr collected over a period from 1986 to 1996, the amount credited to IDBI venture capital division's account was only Rs. 57.84 cr over the same period. IDBI never really paid much attention to these funds because the size of the fund was so meager that it could not be kept track of.

The Government's decision to encourage knowledge-entrepreneurship through the promotion of venture capital industry was in the right spirit. But the policy guidelines framed in November 1988 proved to be highly restrictive. It only pictured the Government's caution in allowing private enterprises to flourish. The venture capital guidelines actually proved to be counter productive and never offered any encouragement to the local venture capitalists. For instance, there were no tax incentives for either the venture capitalists or investors in the venture capital guidelines.

In 1996, the Finance Minister in his Budget speech repealed the November 1988 guidelines and announced tax concession to the industry. Fresh guidelines were issued by the SEBI in 1996 and for the first time the guidelines recognized the importance of hands off regulation. Some of the recent amendments include the lifting of 40% ceiling on equity contribution to a single venture. Now a venture capital fund can have 100% of company equity to finance the project. In order to give a fillip to venture activity in India several committees were set up to identify lacunae in the policy guidelines. The recent Chandershekar's Committee (2000)which presented its report in the year 2000 came up with several changes to facilitate flow of foreign capital into India which the government has agreed to in principal.

The formation of Indian Venture Capital Association (IVCA) is yet another development, which coordinates the activities of all the players. Over the last few years, it has become a strong pressure group and has called for several changes in the policy of the Government.

### II.a. Venture Capital Commitments

Indian venture capital industry is now considered as one of the predominant players among South Asian countries. The industry underwent a major shift in focus. It is not one of those countries which offers lower-cost production alternatives, but is a hi-tech and global

outsourcing center. New funds have opened their shop here in India and are continuing to bring in more and more funds.

The size of total funds committed to this industry was Rs.4918.9 millions in 1993. This figure rose up by 27 times to Rs.1, 35,053 million in 2000. Similarly the value of investment portfolio was Rs.3178.81 million in 1993 and it rose by about 23 times to Rs.72, 380 million in 2000. As can be seen in Table 1 significant growth was registered during the period from 1998 to 2000 where the growth in investment portfolio is more than 100% on a year on year basis. One can also notice that the industry committed a large pool of resources but only about 50% of it was invested in various ventures leaving a significant portion uninvested. The reason is venture capitalists are unable to find good quality deal flow (Vinay Kumar A, et al. 2002).

Venture capitalists grew more cautious in investing in new opportunities in 2001(IVCA Year Book, 2001). This trend is not unusual because a similar pattern can be observed in the international venture capital markets. Year 2001 witnessed a fall of 21.8 p.c. in disbursements when compared to previous year $907.58 millions investment in 101 new ventures.

### II.b. Stage Wise Investment

The concern that the industry is changing gears and is shifting its focus to later stage investment opportunities cannot be ignored. A highly contrasting picture emerges if we compare the figures of 1993 with those of 2000. In 1993 the cumulative funds committed to seed stage was as much as the cumulative funds invested in later stage (See Table 2). The figures in the year 2000 speak a different language altogether. Now the major share of funds stays invested in later stage (about 51%) and second comes the start up stage, which attracted 40% of the total fund invested. Seed stage appears to have few takers as the years rolled by. The reasons are once again lack of good quality deal flow in the early stage ventures and shift in risk preference of venture capitalists. Some venture capitalists are parking their funds in safer bets.

Only a few venture capital companies seemed to be active in the year 2001. All stages of investment reported a decline when compared to 2000 with one exception i.e. early stage ventures indicating renewed interest back into this stage.

## III. Data and Methodology

The data of venture backed IPOs was collected from various venture capitalists in India. Since there is no database in India on venture backed IPOs, venture capitalists were requested to disclose the names of the companies which went public from the funds they operated. Many venture capitalists shared their list of IPOs with me. The number of IPOs that formed part of the present study is 40 from among the 47 names we had. The study used various sources to collect information about these companies. Firstly I have used Center for Monitoring Indian Economy (CMIE) dataset of all the IPOs from 1989 to 2002. The dataset does not contain information about some companies on our list. Also, it was found to be an insufficient dataset in terms of information regarding the underwriters and other details required for the study. So I turned to getting the information from popular magazines in India namely *Dalal Street* and *Capital Markets* to gain requisite information about the companies on our list. Again we faced difficulty in getting information regarding some companies on our list even from these magazines. The time period of the study is June1992 to March 2001.

In order to compare with the venture backed asset class we have chosen non-venture IPOs from the above mentioned sources in the similar manner for the same period. We had 62 IPOs in this sample. A total of 102 companies formed the sample for the study.

### III.a. Regression Models

In order to understand whether venture capitalists make any difference on the board, I have studied the determinants of underpricing in India. Initial day returns could be influenced by factors such as the prevailing market condition, the venture capitalist acting as one of the board members, the ability of the firm to employ a good merchant banker, the technology of the firm, the size of the issue, the time the company would take to list on the stock exchange and the number of times the issues gets subscribed.. In India listing delay is phenomenal, it was as high as 1095 days in the present sample and as low as 45 days. The reason is previously the norms instituted were in sufficient with regard to listing delay. Even thought the present SEBI norms say that after the closing date of the issue the stock should be listed within 16 days (T+16, where T is the closing date) the listing delay still seems to be a sour issue in Indian primary markets. The following equation was employed for the purpose.

$$R_{it} = \beta_0 + \beta_1 MARKET + \beta_2 VENT + \beta_3 RANK + \beta_4 LSIZE + \beta_5 LDELAY + \beta_6 TIMES + \beta_7 TECH - \quad (1)$$

Where

$R_{it}$ is the initial day raw return[1]

$\beta_0$ is the intercept

$\beta_1$ through $\beta_7$ are model coefficients

MARKET = the return on the market index for the similar period as the initial day returns used as proxy for market condition

VENT is coded as 1 for companies with venture capitalist on the board and 0 other wise

RANK is coded as 1 for lead managers of issue, if they are among the top five during that period and 0 otherwise

LSIZE is log of Issue size

LDELAY is Log of number of days delay for listing

TIMES is number of times the issue is subscribed

TECH is coded as 1 for companies, if the sampled company is a technology companies and 0 otherwise

The *a priori* relationship of each of the above independent variables on the dependent variable can be stated as positive if the direction of movement is in one direction i.e. if they have direct relationship and negative they are inversely related. The variables which have a positive

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[1] Initial day raw return are calculated as $R_{it} = \left\{ \frac{P_{it}}{P_{i0}} - 1 \right\} * 100$, Where $P_{it}$ is closing price on the first day of trading and $P_{i0}$ is offer price

relationship with underpricing are MARKET, LDELAY, TECH and TIMES. The variable which are supposed to be negatively related are VENT, RANK, PREMIUM and LSIZE. The logic is simple prevailing market conditions directly effect underpricing, if the market returns are high then the underpricing will also be high because as investor expectations from one point in time to the other increase the expectations of the returns on the stock that went public will also increase. Delay in listing on the stock exchange may cause uncertainty in the price discovery process. The investors thus would like to see the stock listed at a higher price then the offer price compensating for the time loss. The technology of the firm going public is new then it again may cause uncertainty in the minds of investors, and may effect the price discovery process causing underpricing. The number of times an issue gets subscribed could also send a signal to the market that the offer price was too less and that is the reason why many investors have subscribed to the issue and listing price may go up because investors who take this cue that the issue is priced too less and could be taken advantage of may buy the issue on the first day of trading thus causing underpricing.

Good quality issues are not underpriced as compared to the bad quality counterparts. So underpricing is inversely related to venture backed IPOs, because they are good in quality. Venture capitalists generally bring value addition to the venture they fund and hence these firms are generally of high quality thus should be negatively related to underpricing. Again the public offer of firms of good quality are managed by reputed lead managers, because if the manage bad quality issues their reputation will be at stake. Since good quality IPOs price discovery is more efficient than the bad quality ones underpricing is less and lead managers help in the process of this price discovery. Thus reputed lead managers role is negatively related to underpricing. Premium issues are regulated by profitability and track record norms by SEBI hence firms which fulfill these norms may be of good quality and the offer document indicates the justification for the premium, thus premium issues may be less underpriced as compared to par issues suggesting an inverse relationship. Issue size may also play a role in pricing of the issue, the logic is bigger firms can afford offer bigger chunk of their shares to public. Since bigger firms demonstrate their existences in terms of past profitability and future plans, their issues may not be underpriced as much, thus suggesting an inverse relationship with underpricing.

A similar regression was also employed to test the effect of the above mentioned independent variables on the annualized initial returns[2].

The second set of regression equations were employed to understand whether venture backed company do better after listing. For the purpose all the above mentioned independent variables were used to study their influence on the returns after listing. Returns were calculated from the listing day to one month period after listing, two-month period and three month periods. The following equation was used for the purposes.

$$MR_{it} = \beta_0 + \beta_1 MARKET + \beta_2 VENT + \beta_3 RANK + \beta_4 LSIZE + \beta_5 LDELAY + \beta_6 TIMES + \beta_7 TECH- \quad (2)$$

Where $MR_{it}$ is Monthly after market returns, the suffix t denotes number of months, in the present case one month, two month and three months.

Finally to understand the determinants of certification by venture capitalist as logistic regression was used of the form as depicted in equation number 3. Since variable VENT is a

[2] For the purpose of annualized return $R_{it}$ was multiplied by a factor of (365/ DELAY). Where DELAY is number of days elapsed before listing the issue on the stock exchange.

dichotomous variable logistic regression is appropriate for the purpose. The logistic regression estimates the odds ratio favoring VENT =1, that is odds of a company being venture backed. The logarithmic form of the odds ratio will give us the linear regression equation of the form shown in equation 3.

The possible independent variables that have a bearing on certification of venture capitalist are the reputation of lead managers and good lead manager not being able to take up the task of managing the issue if they are not convinced about the quality of the issue. RANK is used as a proxy for reputation of the lead manager. After market returns should essentially differentiate venture backed firms from non venture backed firms, to proxy this aspect three months returns were used in the model. The technology of the firm should differentiate venture backed firm from a non venture backed firm, to proxy this aspect TECH variable was used and finally in order to study the influence of size on venture backed companies LSIZE was used in the model.

$$Logit\ (VENT) = \beta_0 + \beta_1 RANK + \beta_2 MR_1 + \beta_3 MR_2 + \beta_4 MR_3 + \beta_5 TECH + \beta_6 LSIZE \quad (3)$$

Where $MR_1$, $MR_2$, and $MR_3$ are the return after one month, two month and three months of listing respectively from the first day of closing.

## IV. Results

The overall underpricing in Indian IPOs is about 120% which is consistent with earlier studies in India (See Table 3, Panel C). The returns in the months to follow seem to fall drastically, which is not reported in the studies previously conducted. Panel D of the table presents the underpricing of non-premium and premium issues. Premium issues are issues offered at a higher price than their face value, which is usually Rs.10 in India. In 1992 SEBI introduced free pricing of the issues in India. The underpricing for non-premium issues is very high at 203% whereas premium issues underpricing is at 49%. In terms of the monthly returns there is not much of any difference.

From Table 3, Panel A, it is evident that the mean underpricing of venture backed IPOs is 63.14%. Whereas the non-venture backed IPOs have an underpricing of as much as 157.64% (from Panel B), which is more than twice when compared to venture backed IPOs. The average returns of venture backed IPOs after listing for three months also seem to be better than the non-venture backed IPOs. In month one after listing if the returns are 16% from venture backed IPOs, it is -16% for non-venture backed IPOs. The third month seems to be lower for both venture backed IPOs and non venture backed IPOs, but even here venture backed IPOs score a point by registering a marginally higher returns when compared to non-venture backed IPOs. The standard deviations for both asset classes, if we compare, again show a similar picture. The standard deviation of initial day returns for venture backed IPOs is 107.77 % where as it is 580.61% for non venture backed IPOs, even though the standard deviation is high for venture backed IPOs representing the general nature of risk involved in this type of asset class, it is much better than the standard deviation of non venture backed IPOs. A similar trend is visible in the standard deviation of returns for a three month period. This strongly suggests that venture capital IPOs are different from their non venture backed counter parts. This also indicates that venture backed IPOs are superior to non-venture backed IPOs. In order to understand whether it is due to certification hypothesis, as cited earlier, I have used regression model discussed in the previous section.

### IV.a. Regression on Initial day returns

Table 4 presents the results of the regression as discussed in equation one from Section 4 above. The dependent variable $R_{it}$ stands for initial day returns and $AR_{it}$ stands for annualized initial day returns. The variables that have a significant't' score for a model regressed on $R_{it}$ are MARKET, LSIZE, TECH and LDELAY. Both VENT and RANK are insignificant. The results of the analysis match the apriori sign mentioned in parentheses in Table 4 excepting one variable that is VENT. The initial day underpricing is explained by a linear relationship with prevailing market conditions, the delay an issue would take to list on the stock exchange and the risk of the technology involved. The initial day underpricing has an inverse relationship with the size of the issue. The variables that contribute to underpricing as is evident from the analysis are market conditions, delay in listing and the technology of the issue. The larger the delay the larger is the underpricing likewise if the venture involves an unknown technology underpricing increases. Market conditions have significant bearing on the underpricing, if market returns are high initial day returns will also be higher and vice versa. The size of the issue has an inverse relationship indicating an increase in issues size reduces underpricing consistent with earlier studies. Initial day underpricing is not explained by both VENT and RANK. This can be interpreted as, even though for VENT the apriori sign does not match, by having venture capitalists on board the IPOs underpricing does not increase. Likewise a good lead manager also does not contribute to the underpricing of the issue.

When a similar regression is performed on the annualized initial day return the results sufficiently match with earlier regression on raw returns. The significant variable that explains the initial day underpricing in annualized term are, TIMES, LSIZE, MARKET. TECH is also at 90% confidence interval. The reason why LDELAY does not come up as a significant variable is annualized returns are adjusted for delay. Again VENT, PREMIUM and RANK are insignificant suggesting that the venture capitalist on the board does not contribute to underpricing of the issue.

From the above analysis it can perhaps be inferred that as venture capitalists backed firms are less underpriced, venture backed IPOs are certified by venture capitalists as superior firms when compared to non-venture backed firms.

### IV.b. Regression Monthly returns after listing

Table 5 presents the results of equation number two, where the dependent variable of the model is the returns after one month, two months and three months from the first day of closing. The purpose of this regression is to see whether venture capital backed companies perform well after the listing. The regression on return of month two and three did not yield significant results, so the table only presents the results of return of month one after listing. The two variables that came out as significant are VENT and LDELAY, all other variables are insignificant. The apriori signs also match the results. The first month returns of venture backed IPOs are significantly high. That means all venture backed IPOs register positive first month returns. These returns however will be lowered if the delay in listing increases. The reason why other variables came out as insignificant is they are already discounted for in the initial day closing price.

From the above analysis it is evident that venture capital backed IPOs are high quality IPOs. To have a venture capitalist on the board could signal quality of the IPO. And that is the reason why the first month returns are high, after that the returns fall probably because of the increased supply of the stock from venture capitalists and other institutional investors in the market.

### IV.c. Logistic Regression

If venture backed IPOs are superior to non-venture backed IPOs and venture capitalists certify the quality then it is pertinent to understand what distinguishes venture backed IPOs from non-venture backed IPOs and what are the determinants of certification. For this purpose a logistic regression was employed. Since variable VENT is coded as a dichotomous variable employing OLS would seriously compromise on the assumptions of BLUE[3], since it is a non linear variable. Therefore a form of non linear regression which involve maximum likelihood estimation was employed, which is performed in an iterative manner. The logic of the regression is whether the classification of cases into one or the other of the categories (i.e. one and zero in the present case), of the dependent variable can be predicted by independent variable instead of predicting arbitrary value for dependent variable through OLS (Menard, 2001).

The model registered significant Wald Score on variables such as MR1, LSIZE and RANK as is evident from Panel A. The model fit is good because Hosmer and Lemeshow Test is insignificant as can be seen from Panel C of Table 6. The -2LL from Panel B is low again indicating a good fit for the model. This can be interpreted as, the most distinguishing factors that separate venture backed IPOs from non-venture backed IPOs are the returns after listing, the size of the issue, and the rank of lead manager. Since venture capital companies are perceived as high quality by the lead managers they make efforts to manage the issue and therefore venture backed IPOs get a good response and better valuation as an offer price closer to the first day trading price. The venture backed IPOs, because of their superiority deliver expected results after listing.

## V. Conclusions and Further Research

Indian research on initial public offerings is sparse. Previous studies have highlighted the presence of significant underpricing in IPOs. Studies also review the aftermarket performance of these IPOs but the aspect of venture backed IPOs and certification was never studied before. The present study has attempted to study whether venture backed IPOs are different in terms of underpricing and does it indicate certification of quality by venture capitalists. The study finds that underpricing is significantly less in venture backed IPOs and through econometric models it finds that the presence of venture capitalists on the board does signal quality of the IPO and therefore certify the IPO.

The other aspect that was intended for this study was if venture capitalists could certify the, IPO what distinguishes venture backed IPOs from non-venture backed IPOs. For this purpose a logistic regression model was employed and the study finds that the determinants of certification are aftermarket returns, size of the issue and lead manager role. That means venture backed IPOs were managed by good lead managers and venture capitalists should always try and employ good lead mangers because good lead manager understand the importance of a venture capitalist and therefore they can market it better.

The present study would dispel general attitude towards an IPO of a venture capitalists that they tend to perceive it as very risky and is fraught with dangers of failure. Good lead managers generally understand the kind of value addition venture capitalists try to make to a firm they fund and they therefore attempt market the firm at a better price thus reducing underpricing.

Further research should concentrate on the long term performance of venture backed IPOs. The issue of percentage of ownership that venture capitalists would like to retain after the IPO could also be investigated as a potential signal. It would be interesting to evaluate whether

[3] BLUE stands for best linear unbiased estimation.

there is any conflict of interest between the underwriter and the venture capitalist, if so how such issues have to be addressed.

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**Table I**
**Venture Capital Commitments**

| (Rs./million) | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999* | 2000* |
|---|---|---|---|---|---|---|---|---|
| Amount Invested | 3173.81 | 4258.04 | 5724.55 | 6728.5 | 10000.4 | 12559.8 | 34905 | 72380 |
| No of Companies | 428 | 488 | 602 | 622 | 691 | 728 | - | 1213 |
| Amount Committed | 4918.92 | 6119.25 | 8281.00 | 14019.0 | 25595.1 | 29884.0 | 79452 | 135053 |

Source: Complied from IVCA annual publications
*Figures from AVCJ 2001 edition.

**Table II**
**Stage Wise Investment**

| Rs. Million | 1993 | 2000* | 2001** |
|---|---|---|---|
| Seed | 822.49 | 6514.2 | 1200 |
| Startup | 1248.22 | 28952 | 1843.2 |
| Early | 236.19 | - | 14126.4 |
| Later | 838.45 | 36913.8 | 1281.6 |
| Turnaround | 28.46 | - | - |

Source: Compiled from IVCA annual publications
*Figures from AVCJ 2001 edition.
** Figures from IVCA Year Book 2001, converted from dollars to Rs.

**Table III**
**Descriptive Statistics**

| Variable | N | Minimum | Maximum | Mean (%) | Std. Deviation |
|---|---|---|---|---|---|
| **Panel A** | | | | | |
| VC Initial Returns | 40 | -85.71 | 550.00 | 63.1474 | 107.77881 |
| VC Return after month1 | 40 | -62.35 | 126.13 | 16.0437 | 44.20501 |
| VC Return after month 2 | 39 | -37.50 | 42.50 | -.3346 | 16.27757 |
| VC Return after month 3 | 39 | -1.00 | 6.76 | .3102 | 1.52643 |
| **Panel B** | | | | | |
| Non VC Initial Return | 62 | -97.50 | 3280.50 | 157.6489 | 580.61313 |
| Non-VC monthReturn1 | 62 | -100.00 | 190.00 | -16.2932 | 57.77012 |
| Non-VC month Return 2 | 62 | -37.50 | 36.10 | .3266 | 13.21345 |
| Non-VC month Return 3 | 62 | -1.00 | 6.76 | .1839 | 1.46045 |
| **Panel C** | | | | | |
| ALL Sample Initial Return | 102 | -97.50 | 3280.50 | 120.5895 | 458.51652 |
| ALL Sample month R1 | 102 | -100.00 | 190.00 | -3.6121 | 54.97201 |
| ALL Sampler month R2 | 101 | -37.50 | 42.50 | .0713 | 14.39765 |
| ALL Sample month R3 | 101 | -1.00 | 6.76 | .2326 | 1.47996 |
| **Panel D** | | | | | |
| Initial Return to Non-Premium Issues | 47 | -30.00 | 3280.50 | 203.5780 | 660.24244 |
| Non-P month R1 | 47 | -100.00 | 126.13 | -12.1977 | 51.56471 |
| Non-P month R2 | 46 | -37.50 | 36.10 | 2.3761 | 12.02102 |
| Non-P monthR3 | 46 | -1.00 | 6.76 | .2347 | 1.67279 |
| Premium Initial R | 55 | -97.50 | 550.00 | 49.6721 | 103.75801 |
| P month R1 | 55 | -100.00 | 190.00 | 3.7248 | 57.16750 |
| P month R2 | 55 | -37.50 | 42.50 | -3.8309 | 15.42629 |
| P month R3 | 55 | -1.00 | 3.89 | -.0023 | .84109 |
| | | | | | |

**Table IV**
**Regression on Initial day returns and annualized returns**

| **Variables ( Apriori Sign)** | **Coefficient** | **Sig** | **Coefficient** | **Sig** |
|---|---|---|---|---|
| Dependent Variable | $R_{it}$ | | $AR_{it}$ | |
| (Constant) | -593.13<br>(-1.694) | .094 | 209.036<br>(.440) | .661 |
| VENT (-ve) | 99.416<br>(0.893) | .375 | 175.199<br>(1.159) | .250 |
| TIMES (+ve) | 1.555<br>(0.935) | .353 | 5.039<br>(2.230) | .028 |
| PREMIUM (-ve) | -28.384<br>(-0.260) | .796 | 6.596<br>(.044) | .965 |
| RANK (-ve) | -100.006<br>(.0906) | .367 | -185.254<br>(-1.237) | .219 |
| TECH (+ve) | 217.464<br>(2.132) | .036 | 225.892<br>(1.632) | .106 |
| LDELAY (+ve) | 192.455<br>(2.737) | .008 | 88.441<br>(.927) | .357 |
| LSIZE (-ve) | -139.987<br>(-2.422) | .018 | -228.417<br>(-2.911) | .005 |
| MARKET (+ve) | 7.179<br>(3.363) | .001 | 14.137<br>(4.878) | .000 |
| $R^2$ (Adjusted $R^2$) | 0.284<br>(0.218) | | 0.331<br>(0.270) | |
| F | 4.305 | .000 | 5.393 | .000 |

Note: t statistic in parentheses

**Table V**
**Regression on the returns after listing**

| **Variables ( Apriori Sign)** | **Coefficient** | **Sig** |
|---|---|---|
| Dependent Variable | MR1 | |
| (Constant) | 49.945<br>(1.116) | .268 |
| VENT (+ve) | 31.584<br>(2.1012) | .047 |
| TIMES (-ve) | 0.243<br>(1.139) | .258 |
| PREMIUM (-ve) | -17.488<br>(-1.267) | .209 |
| RANK (+ve) | -2.488<br>(.154) | .878 |
| LDELAY (-ve) | -16.257<br>(-1.788) | .077 |
| LSIZE (+ve) | 5.313<br>(-.723) | .472 |
| MARKET (+ve) | .609<br>(.838) | .404 |
| $R^2$ (Adjusted $R^2$) | 0.181<br>(0.112) | |
| F | 2.646 | .016 |

Note: t statistic in parentheses

**Table VI**
**Logistic Regression; Dependent Variable VENT**

| Panel A | | B | S.E. | Wald | df | Sig. | Exp(B) |
|---|---|---|---|---|---|---|---|
| | MR1 | .015 | .005 | 7.359 | 1 | .007 | 1.015 |
| | MR2 | -.014 | .024 | .365 | 1 | .546 | .986 |
| | MR3 | .006 | .251 | .000 | 1 | .982 | 1.006 |
| | LSIZE | .132 | .047 | 7.888 | 1 | .005 | 1.141 |
| | TECH | .329 | .576 | .326 | 1 | .568 | 1.390 |
| | RANK | 1.921 | .653 | 8.649 | 1 | .003 | 6.825 |
| | Constant | -2.358 | .560 | 17.708 | 1 | .000 | .095 |
| Panel B | Model Summary | | | | | | |
| | -2 Log likelihood | | Cox & Snell R Square | | Nagelkerke R Square | | |
| | 88.782 | | .356 | | .485 | | |
| Panel C | Hosmer and Lemeshow Test | | | | | | |
| | | | Chi-square | df | Sig. | | |
| | | | 4.534 | 8 | .806 | | |